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# **UTILITY APPLICATION**

**OF**

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**FOR**

**UNITED STATES PATENT**

**ON**

**PLASTIC CONNECTOR FOR  
CONNECTING PARTS AND METHOD  
THEREFOR**

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# **PLASTIC CONNECTOR FOR CONNECTING PARTS AND METHOD THEREFOR**

## **BACKGROUND OF THE INVENTION**

### **Field of the Invention**

This invention relates generally to connectors and more specifically to  
5 connectors for moveable, wing-like appendages for novelty items and for methods of  
using them. Assembled objects such as birds having extending wings are difficult to  
ship because of the amount of room they take, in assembled form, in shipping cartons.  
Because so many objects are now manufactured abroad, it is desirable to have as  
compact shipping as possible. Therefore, it becomes desirable to be able to ship  
10 articles in an unassembled state yet still allow easy assembly of the article, for example  
a bird novelty with extending wings once delivered to the vendor.

### **Description of the Related Art**

Generally winged, push-through type connectors are well known in the art.  
15 They are used for applications from seating circuit boards to securing light fixtures to a  
ceiling. The prior art connectors are rigid and typically fasten nonmoveable objects  
together. In contradistinction, applicants' invention is intended to couple a moveable  
object in an unassembled state in secure assembled fashion.

## **SUMMARY OF THE INVENTION**

The present invention comprises a connecting structure including a post with a first end, middle portion, and a second end, a plurality of prongs flexibly connected to the first end, extending toward the second end in a V-shape such that when inserted through a hole or bore of an object allows for easy assembly therewith in secure fashion.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a side view of the connecting structure according to the present invention.

Figure 2 is a partial cross-sectional view of a novelty with an aperture utilizing the connecting structure according to the present invention.

Figure 3 is a perspective view of a novelty utilizing the present invention.

Figure 4 is a perspective view of the connecting structure.

## **DESCRIPTION OF THE PREFERRED EMBODIMENT(S)**

The detailed description set forth below in connection with the appended drawings is intended as a description of presently preferred embodiments of the invention and is not intended to represent the only forms in which the present invention may be constructed and/or utilized. The description sets forth the functions and the sequence of steps for constructing and operating the invention in connection with the illustrated embodiments. However, it is to be understood that the same or equivalent functions and sequences may be accomplished by different embodiments that are also

intended to be encompassed within the spirit and scope of the invention as set forth in the independent claims.

A connecting structure according to one embodiment of the present invention is shown in Figs. 1 and 4 generally at **10**. Connecting structure **10** typically includes a cylindrical post **12**, which has a first end **14**, a middle portion **16**, and a second end **18**. Furthermore, connecting structure **10** typically includes outwardly flared prongs **20** which are flexibly coupled to post **12** and which extend away from the first end **14** of post portion **12**. Prongs **20** typically extend away from first end **14** toward second end **18** in an inverted (as shown) V-shaped manner. Typically, connecting structure **10** includes two or more prongs **20** that fit through an aperture to secure connecting structure **10** to the object having the aperture.

Post **12** is typically cylindrical, molded plastic 0.5-0.75 inches in length, and 0.05-0.1 inches in diameter. However, it will be appreciated that other materials, configurations and dimensions can be used, as desired.

Prongs **20** are typically integrally formed as a portion of post **12**, but may be flexibly coupled in any other manner that allows prongs **20** to extend through an aperture and then expand to wider than the aperture to secure connecting structure **10** to the object with the aperture by reason of the abutment or collar stop **24** and the termini of prongs **20** as best seen in Figure 2. Connecting structure **10** is typically made of molded plastic, but may be made from any other material that allows prongs **20** to flex.

Figure 2 depicts connecting structure **10** including prongs **20**, abutment or collar stop **24** being disposed in aperture **25** and held in place by reason of cooperative

relationship of abutment or collar stop **24** and the termini **27** of prongs **20**. In this instance the second end **18** of post **12** is inserted in secure relationship with connecting member portion **22** which is integrally connected to portion **32** of connecting member **21**. Connecting member **21** is depicted as a coil spring with portions **22** and **32** being  
5 at right angles to one another.

Connecting member portion **22** typically encircles the second end **18** of post **12** extending toward middle portion **16**, such that an object such as a wing connected to connecting member **21** may move with respect to post portion **12**.

Connecting structure **10** has post **12** typically formed as shown in Figs. 1 and 4  
10 which is then inserted into connecting member **21**, with abutment or collar stop **24** forming a stop as previously described. The second end **18** of post **12** is configured to extend a small distance through connecting member portion **22** of connecting member **21**. A hot rod or the like is then applied to the protruding termini of second end **18** to melt the end thereof to form barrier **25**, such that connecting member portion **22** cannot  
15 be removed from end **18** of post **12**. It will be appreciated that this securement may be accomplished in other ways, including molding post **12** in association with connecting member portion **22** of connecting member **21**.

Abutment stop or collar **24** is typically configured to also delineate where connecting member portion **22** may extend to. Abutment stop or collar **24** is also  
20 configured to be adjacently positioned to an object having an aperture so that prongs **20** fit through the aperture as previously described. Abutment stop or collar **24** typically extends away from post **12** a distance greater than that of connecting member portion

22, but not as far as the termini 27 of prongs 20. Heat fusion stop 25 is typically formed to extend away from post 12 a distance that does not allow connecting member portion 22 to slide off of post 12, but may extend other distances.

In the embodiment depicted, connecting structure 10 is intended to couple generally "L"-shaped connecting member 21 having portions 22 and 32. Connecting member 21, in this embodiment, has connecting member portion 22 encircling second end 18 of post 12 extending toward middle portion 16, ending at abutment stop or collar 24. Connecting member 21 is typically an "L"-shaped coil spring, but may be configured otherwise. In this instance the "L" shape better simulates the movement of a bird's wing, but other configurations may be used. Connecting member 21 is typically 0.2 - 0.5 inches long, and 0.1 - 0.25 inches for each portion of the "L" shape, however other dimensions can be used as desired.

As seen in Figures 2 and 3 it is desired to connect wings of a bird, for example, to the body after unassembled shipment. The connector 10 is shipped in secured relationship with the wing or appendage 40. The wing or appendage is then assembled to the body 44 by inserting the connector 10 with attached wing or appendage 40 to the body 44 as previously described. To achieve realistic form the connector 21 has portion 22 at right angles to portion 32 as the weight of the wing or appendage will cause drooping or bending of the spring connector 21. As shown in Figure 2, body 44 typically includes apertures 25 and 46 and is configured to receive connecting structure 10 such that connecting structure 10 slides through apertures 25 and 46 and prongs 20 expand on the other side of body 44 to secure connecting structure 10 and wing or

appendage **40** to body **44**. Prongs **20** flex inward or toward post **12** to allow connecting structure **10** to pass through apertures **25** and **46**. Prongs **20** then expand and return to the unflexed position to secure connecting structure **10** with the secured wing or appendage **40** to body **44**. With this configuration, connecting structure **10** will connect  
5 to body **44** and to appendage **40**, such that appendage **40** will be springly moveable with respect to post **12** and body **44** due to connecting member **21**. Connecting member **21** here depicted as a coil spring in configuration may be configured to flex with relatively small forces acting upon it.

Body **44** is typically a bird, but other novelty designs may be used, as desired.  
10 Body **44** is typically 10.0 - 20.0 inches long by 4.0 - 10 inches wide, by 10.0-20.0 inches high. It will be appreciated that other dimensions and designs for body **44** may be used, as desired whether as planters or bird feeders.

Connecting member **21** may be configured with a spring constant such that wing or appendage **40** will move with relatively low forces acting upon it. Low forces may  
15 include a summer breeze or other small force, either natural or man-made. To disassociate wing or appendage **40** from body **44**, prongs **20** are pressed together toward post **12** and connecting structure **10** may be removed from apertures **25** and **46**.

Wing or appendage **40** typically has an enclosure **42** that is configured to connect to connecting member **21** via connecting member portion **32**. Enclosure **42** is  
20 typically an enlarged portion of appendage **40** that is molded around connecting member portion **32** to connect to it, but other methods of coupling connecting member **21** and appendage **40** may be utilized. Appendage **40** may be in the shape of a wing,

and is typically 5.0 - 15.0 inches in length and 2.0 - 8.0 inches wide.

Figure 3 is a perspective view of a novelty depicting a bird and employing the connecting structure **10** of the present invention. Novelty **50** includes body **44** and appendage **40**, and connecting structure **10** configured to connect body **44** to appendage **40**. With this configuration, appendage **40** may move and simulate the wing movement of a bird, insect, or the like. Appendage **40** is typically shaped like a wing, but may be shaped like other appendages including arms or legs of a Halloween character, or the like. Body portion **44** may be configured to form a flowerpot, but also may be in the form of other novelties.

Both body **44** and appendage **40** are typically made of molded plastic, but may be made of other materials, including painted ceramic. Novelty **50** may be configured such that connecting structure **10** and appendage **40** may be disassociated from body **44** such that appendages **40** may be removed from body portion **44**. This configuration allows all parts of novelty **50** to fit into a smaller package than when in the assembled form. Therefore, novelty **50** may then be packaged, shipped and stored in a smaller package, thus saving shipping costs and valuable shelf space in a retail store.

In an exemplary embodiment, body **44** is approximately 13.5 by 6.5 by 14.0 inches, appendage **40** is approximately 4.5 by 10.0 inches, post **12** is approximately 0.625 inches long and 0.0625 inches in diameter, prongs **20** are approximately 0.25 inches long, and connecting member **22** is 0.25 inches and 0.50 inches in a generally "L"-shaped configuration.

While the present invention has been described with regards to particular



embodiments, it is recognized that additional variations of the present invention may be devised without departing from the inventive concept.